

**DEPARTMENT OF TRANSPORTATION  
STATE OF GEORGIA**

---

**BRIDGE FOUNDATION INVESTIGATION**

**INTRODUCTION**

---

The purpose of performing a BFI (Bridge Foundation Investigation) is to obtain subsurface information on which a structure will be built. This information is used to design the substructure and provide foundation recommendations to the bridge designer in the BFI report. In addition, the boring log information included in the BFI report may also be referred to during construction.

Prior to preparing a final BFI report, the following activities should be performed:

1. For replacement of an existing structure, search for any boring log data or site information. This may eliminate or reduce the amount of field work required.
2. Visit the project site to evaluate site access for drilling and other potential problems that may not be apparent on the layout or roadway plans. Following the site visit, specify drilling and sampling procedures to be performed.
3. Have utilities located, notify property owners, and arrange for necessary traffic control.
4. Perform all subsurface borings as instructed by the Engineer. This may include SPT and sampling, pushing Shelby tubes, coring rock, and groundwater level checks.
5. All of the samples and information obtained in the field will be evaluated to determine which samples should be tested and which tests to perform.
6. All of this data is then used to begin analysis and preparation of the final BFI report.

Some of the information included in the BFI report is outlined below. This information may vary depending on the geologic formation, type of crossing (grade, stream, or railroad), span length, and based on past Geotechnical experience.

1. The BFI report provides recommendations for foundation types. For piles this would also include pile type, maximum pile design load, and minimum and estimated tip elevations. Drilled shaft and spread footing recommendations include maximum design bearing values and bottom of shaft and bottom of footing elevations, respectively.
2. PDO – Pile Driving Objective.
3. Waiting periods for driving of piles or pouring of the approach slabs.
4. Addressing the theoretical scour line, potential for stream migration, and erosion protection.
5. Address the potential for special problems that may arise during construction and give preventive measures or options for handling the situation.
6. If a viable alternate is feasible, provide this recommendation and explain the advantages and/or disadvantages of the alternate foundation.

All of the steps required for preparing a BFI report may involve several parties working in conjunction and cooperatively with each other.